National Institute of Environmental Health Sciences

The impact of heat waves on mortality in 9 European cities: Results from the EuroHEAT project

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Abstract:

BACKGROUND: The present study aimed at developing a standardized heat wave definition to estimate and compare the impact on mortality by gender, age and death causes in Europe during summers 1990-2004 and 2003, separately, accounting for heat wave duration and intensity. METHODS: Heat waves were defined considering both maximum apparent temperature and minimum temperature and classified by intensity, duration and timing during summer. The effect was estimated as percent increase in daily mortality during heat wave days compared to non heat wave days in people over 65 years. City specific and pooled estimates by gender, age and cause of death were calculated. RESULTS: The effect of heat waves showed great geographical heterogeneity among cities. Considering all years, except 2003, the increase in mortality during heat wave days ranged from + 7.6% in Munich to + 33.6% in Milan. The increase was up to 3-times greater during episodes of long duration and high intensity. Pooled results showed a greater impact in Mediterranean (+ 21.8% for total mortality) than in North Continental (+ 12.4%) cities. The highest effect was observed for respiratory diseases and among women aged 75-84 years. In 2003 the highest impact was observed in cities where heat wave episode was characterized by unusual meteorological conditions. CONCLUSIONS: Climate change scenarios indicate that extreme events are expected to increase in the future even in regions where heat waves are not frequent. Considering our results prevention programs should specifically target the elderly, women and those suffering from chronic respiratory disorders, thus reducing the impact on mortality.

Source: http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2914717

Resource Description

Exposure :

weather or climate related pathway by which climate change affects health

Meteorological Factors, Temperature

Temperature: Extreme Heat

Geographic Feature:

resource focuses on specific type of geography

Ocean/Coastal, Urban

Geographic Location:

resource focuses on specific location

Non-United States

Non-United States: Europe

European Region/Country: European Country

Other European Country : Greece; Spain; Hungary; United Kingdom; Italy; Germany; France

Health Impact:

specification of health effect or disease related to climate change exposure

Cardiovascular Effect, Morbidity/Mortality, Respiratory Effect

Cardiovascular Effect: Other Cardiovascular Effect

Cardiovascular Disease (other): cardiovascular mortality; cerebrovascular mortality

Respiratory Effect: Other Respiratory Effect

Respiratory Condition (other) : respiratory mortality

Population of Concern: A focus of content

Population of Concern:

populations at particular risk or vulnerability to climate change impacts

Elderly

Resource Type:

format or standard characteristic of resource

Research Article

Timescale:

time period studied

Time Scale Unspecified